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ABSTRACT

The paper discusses the interdisciplinary approach used by the Amity High School House Construction Project to develop a construction cluster in a small high school, to give students on-the-job training, and to teach them the relevancy of academic education. The project's monthly plan of action is briefly described. Suggested activities, competencies, and performance indicators are provided for teaching grade school and high school mathematics, industrial arts, communications, art, physics/chemistry, physical education, business, advanced agriculture, drafting, home economics, occupational versatility, and a construction cluster (e.g., carpentry, cabinetmaking, plumbing, heating, roofing). Competencies involve such subjects as measurements, vocabulary, written and verbal orders, job applications, costs of buying and maintaining a home, heating and cooling systems, stress and strain, selection of color schemes, lifting techniques, safety methods and procedures, blueprints, preparation of specifications, landscapes, excavation, evaluation of dwellings, building codes, advertisements, marketing procedures, and principles and elements of design and housing. The paper concludes with 23 suggested activities on such topics as career interests; homemaking; choosing and preparing for an occupation; apprenticeship; and various types of occupations (e.g., professional, semiprofessional, administrative, office, selling protective service, fishery and forestry, graphic, skilled, semi-skilled, and unskilled). (NQA)

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Interdisciplinary Approach to Building Construction

November 1976

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RC 01 32 96

Amity School District #4J

B U I L D I N G C O N S T R U C T I O N

BY
Harry Armstrong
Building Construction Program

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	Lana Read	Supervisor
	Opal Lahley	Typist
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Administration:	Pete Trott	Elementary Principal
	Bill Buffum	High School Principal
	Charles W. Wiltse, Jr.	Superintendent
Board of Directors:	Milton Fanning	Chairman
	Carl Dauenhauer	
	Phil Olson	
	Hal Sheldon	
	Stan Goffena	

Fall, 1976

PREFACE (UPDATE)

Amity School District 4J
P. O. Box 138
Amity, Oregon 97101

Yamhill County, Oregon
Tel: 503-835-2181

District Enrollment 605

Amity is a small, rural farming district six miles south of McMinnville on Highway 99W. The farming consists of field crops, row crops and some livestock. There are two outlying feeder elementary schools, one elementary school in town, and the high school. Amity is within the Chemeketa Community College District.

The original Small Schools Career Education Developmental Project lasted from 1974-1977. The present career and vocational education program is built into the curriculum guides, established in the scheduling procedures, and is part of the Amity High School graduation requirements.

The program is made up of the following components:

CAREER AWARENESS

- Awareness Advisory Committee
- Cadre-trained instructor in career awareness
- "Career Carrousel"--activities and concepts of career awareness

CAREER EXPLORATION

- Career Exploration Advisory Committee
- Economics curriculum for eighth grade, "The Real World of Work"
- Modified SUTOE curriculum for seventh grade, "Who Am I?"
- Eighth grade Occupational Versatility
- Ninth grade Occupational Cruise into four clusters: Agriculture, Home Economics, Business, Construction
- Ninth grade Cruise Exploratory (CX) English

VOCATIONAL PROGRAMS--CLUSTERS

- Home Economics: Foodservice, Child Care Services, and Clothing Services
- Business: Accounting, Clerical, Secretarial
- Vocational Agriculture

COOPERATIVE WORK EXPERIENCE

- Agriculture and related occupations
- Business
- Cadet Teaching

COOPERATIVE WORK EXPERIENCE (Cont.)

Construction
Foodservice
Special Education

ADVISORY COMMITTEES

Awareness
Exploration
Agriculture
Business
Home Economics

SPECIAL CAREER/VOCATIONAL CLASSES

EMR "special education" students mainstreamed into vocational programs where possible, i.e., occupational versatility

LONG-RANGE PLAN

Developed through input from staff, administration, and advisory committees; currently being updated

CAREER GUIDANCE

A functioning advisor-advisee program
Career Information Service - Needle Sort
Career Information Service - Inservice Program
Ohio Vocational Interest Survey (OVIS) - grades 8 and 11
Armed Services Vocational Aptitude Battery - grades 9 and 11
Student Needs Assessment - all secondary
Graduate follow-up - SERVE and Guidance

INSERVICE PROGRAMS

Cadre trained in career awareness
Career education administrators
Career education exploratory (CX) English
Career education concepts

INTERDISCIPLINARY

Cruise English Program
Agriculture
Home Economics
Business

VOCATIONAL STUDENT ORGANIZATIONS

Future Business Leaders of America (FBLA)
Future Farmers of America (FFA)
Future Homemakers of America (FHA)
Future Teachers of America (FTA)

The greatest change brought about in the district as a result of this project involvement is that nearly all of the staff have taken on the task of assisting youth with career-related information and making a sincere effort to sit down and meet with students one to one to discuss the students' personal concerns in career planning. This contact with students is vital to the success of any educational program.

What is being done differently? Without tampering with the academic emphasis, career education has been expanded to provide greater opportunities for all students, not just the privileged few who might go on to college. Career and vocational education demonstrates greater respect for the potential of youth than has been shown in the past.

Visitors to the district are certainly welcome; please make an appointment and request the information needed to make your visit as beneficial as possible. The Career Fair which offers presentations about more than 60 occupations to students in grades 7-12 is especially interesting to attend.

It is Amity's hope that more small schools can take advantage of the progress made in the developmental sites by planning visits which may lead to ideas being transported to other districts for implementation.

Materials are available on request. Contact Amity High School Principal George Lanning for additional information or to arrange a visit.

Mr. Lanning comments, "There has been a considerable change in the staff over the past few years so all the items that were developed are not currently being used. There has also been less emphasis placed on career education related activities over the last few years.

"There were, however, many positive things that were developed and are still functioning in our school system today. Some of these include:

Advisor-Advisee Program
CX English
Active Career Awareness, Exploration, Vocational Agriculture, Business and Home Economics Advisory Committees
Occupational Versatility, grades 8-12
Freshmen Cruise"

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AMITY HIGH SCHOOL
INTERDISCIPLINARY APPROACH
to
CAREER EDUCATION

I. AMITY HIGH SCHOOL HOUSE CONSTRUCTION PROJECT:

Amity High School House Construction Project is one method of interdisciplinary approach to Career Education Construction Cluster.

A build-up to this program started in 1973-74 with remodeling of school facilities, using the interdisciplinary approach.

1974-75 - A storage shed, 36' x 80', was constructed using basically the same interdisciplinary approach.

1975-76 - the house construction project with nearly total school interdisciplinary approach.

This three year program is one way to implement a construction cluster in a small high school.

II. REASON FOR IMPLEMENTING PROJECT:

To give actual on-the-job training and teach students the relevancy of academic education.

III. ADVISORY COMMITTEE:

A 14 member advisory committee held monthly meetings, and more often when deemed necessary, to assist in the house construction project. A very important link in the program, keeping the public informed of the progress.

IV. TEXT FOR BUILDING CONSTRUCTION PROJECT 1975-76 WAS:

Modern Carpentry by Willis Wagner, Goodheart-Willcox Publisher 1971 Edition.

Students were required to read and answer the self-help questions at the end of each unit at appropriate intervals to actual application on the job.

V. May 1975 - Annual Assessment favorably.

VI. DESCRIPTION OF PLAN OF ACTION:

Draw plans for Ranch Style House - Drafting class.
70' Length House - Need of 100' width lot, look for lot.

June 1975

Purchase Lot 407 Sherman Street 62' x 115' - $2,053.00
Former drafting student draw ranch style house to fit lot.
Secure Legal papers and permits.

July 1975

Use of NYC students remodeling O.V. facility for school.

August 1975

Order tools and texts and materials for Building Construction class and O.V. facility.

September 1975

Inservice prior to school to start interdisciplinary approach: (1) set up bookkeeping department to keep records, to make payroll and deduction, (grading by non-valid paycheck), purchase order plan, cost analysis monthly of the project. Pay monthly bills by the 10th of month. Submit bids for materials and to sub-contractors for their services working with the students.

Withholding forms and insurance coverage for students prior to class time. Build storage tool shed and dressing room with portable toilet for on the job site, on a 4-wheel trailer. Install radial arm saw in shed, and stock with tools for the job.

Survey lot, locating building lines prior to starting project.

Receive bids from material suppliers and sub-contractors

Layout, excavate, form footings and foundations, pour footings and foundation wall monolithically, install vapor barrier visqueen before pouring pier pads.

Install pier posts and laminate beams out of footing form materials, brace and ready for plumber and heating rough-in.

October 1975

Lay tongue and groove sub-floor - pre-cut studs, trimmers, cripples, plates, headers, etc. Layout plates and frame exterior walls, sheath and raise and nail in place.

Layout and frame interior walls, brace and double plate all walls. Set in shower stall, and tub-shower combination before installing joists.

November 1975

Cut and nail in place: joists, rafters, backing, frieze blocks, purlins, gable end studs, facia and varge rafters. Sheath roof and shingle with asphalt shingles.

December 1975

Exterior doors and windows installed.
Start rough-in wiring.
Top-out plumbing.
TV and telephone pre-wiring.
Finish rough-in wiring.
Electrical inspection for cover.
Insulate Exterior walls.

January 1976

Stock drywall and start hanging ceilings. - Channel 2 TV interview.
Applying drop siding.
Install furnace and cold air duct return.

February 1976

Finish hanging drywall.
Drop siding to walls and T-111 to gable ends.
Start fireplace - head out for exact size.

March 1976

Start taping and spotting nails sheetrock.
Lay base for fireplace.
Start painting exterior of house.
Drywall garage.
Install vapor barrier.
Install underlayment and nail down.
OPEN HOUSE CAREER EDUCATION NIGHT
Paint interior walls.

April 1976

Paint exterior of house.
Dig and install sewer pipe from house to street connection, city back-hoe dig deep part, and lay and backfill.
Stain kitchen cabinets.
Stain casing and base, interior doors and jambs.
Set interior doors.
Case windows and doors.
Install base except for kitchen and baths.
Agriculture department start fence around house.
Form and pour garage driveway, and steps to house.

May 1976

Agriculture department apply top-soil and level for landscape.
Pre-finish cabinets and doors and trim.
Set kitchen cabinets, linen closets and china cabinet.
Install woodbox and bookcases.
Install counter tops on base cabinets.
Install formica on tops of base cabinets, kitchen, and baths.
Linoleum in kitchen, dining room and baths.
Set plumbing fixtures.
Set appliances.
Lay carpet.
OPEN HOUSE 3:00 - 9:00 P.M.
Build storage cabinets in garage.

June 1976

Finish storage cabinets in garage.
Paint storage cabinets in garage.
Clean house and move tool shed back to school.
Wire in appliances.
Finish plumbing hookups.
Check out of school, 6/4/76.
Final cost analysis of the project.
Bid sheets prepared for sale of house.

VII. Interdisciplinary approach - by all students.

MATH	Reading a rule	Figuring board feet
	Measurements	Dividing equal parts
	Volumes	Fractions
	Areas	Decimals
	Triangulation	Adding columns
ENGLISH	Vocabulary	Reading
	Following written orders	Following verbal orders
	Job applications	Salesmanship
SOCIAL STUDIES	Permits	Legal descriptions
	Land appraisals	Costs of buying a home
	Costs of maintaining a home	
	Property taxes	
PHYSICS & CHEMISTRY	Use of simple machines	Heating and cooling
	2nd law of Thermodynamics	Heat transfer and insulation
	Heating systems	Cooling systems
	Electricity	Fire resistant materials
	Dehumidification	Stress and strain
	Sound absorption	

	ART	Selection of color schemes Sequential photos of house project and develop copies for a scrap-book.	Posters for advertising
	HEALTH AND P.E.	Lifting techniques Working together Safety methods and procedures	First aid Personal cleanliness
	BUSINESS	Payroll - weekly Non-valid (Grading purposes) Cost analysis monthly Purchase order plan Pay current bills by 10th of month using purchase order plan Marketing procedures	
	AGRICULTURE DEPARTMENT	Grow shrubs Back-fill Fencing and screens Lawn	Excavate Landscape Watering techniques Fruit trees
	DRAFTING	Correct terminology Sketching Taking accurate measurements Drawing blueprints Preparing specifications	Reading and interpreting blueprints Use of builders level Scaling plans Drawing working drawings Preparing material lists Door and window schedules
	HOME ECONOMICS	Principles and elements of design and housing Trends in housing Building codes Total dwelling construction Planning furnishing and equipment for residents Selecting furnishing	Selection of housing Floor plans and blueprints Evaluating dwellings
		Refer Appendix	
VIII.	EVALUATION	Pre-and post-testing Community acceptance Advisory committee Open House on completion Students selecting career choice	Assessments in and outside Final appraisal of house project Career Education Open House

	Students saved by house project, otherwise they would drop out of school.	Students relating relevancy of academic studies to house construction
IX. DO'S	Manditory dress for job More appropriate tool Use of chain of command	Less activity interference Possibly profit sharing basis Delegate more authority
X. PICTURES	Pictures on Open House flyer 5/26/76 Picture on Open House poster 5/26/76 Scrapbook - progress of project	

GRADE SCHOOL MATHEMATICS

GRADE SCHOOL MATHEMATICS

Board feet Worksheet #1

a) Find the board feet
b) Show multiplication of 2 digits or more

1.	1" x 3" x 45"	2.	1" x 1' x 56"
3.	1" x 3" x 1-1/2'	4.	1" x 5" x 27"
5.	1" x 7" x 66"	6.	1-1/4" x 7/12' x 56"
7.	1-1/4" x 5" x 3'	8.	1-3/4" x 9" x 42"
9.	2-1/2" x 11" x 11'	10.	3" x 14" x 14"
11.	1-1/2" x 2/3' x 15'	12.	1-1/2" x 6" x 9'
13.	2" x 4" x 8'	14.	2" x 8" x 12'
15.	1-1/2" x 5" x 10'	16.	1" x 1/2' x 18'
17.	1" x 3/4' x 10'	18.	1" x 8" x 15'
19.	1" x 16" x 12'	20.	1' x 1-1/2' x 16'
21.	6/4" x 18" x 18"	22.	4/4" x 10" x 33'
23.	3/4" x 12" x 22'	24.	4/4" x 5" x 60"
25.	8/4" x 2" x 28'	26.	6/4" x 7" x 54"
27.	5/4" x 4" x 48"	28.	8/4" x 5" x 96"
29.	2" x 8" x 5' - 0"	30.	2" x 4" x 5' - 6"

Board feet Worksheet #2

a) Find the board feet
b) Show multiplication of 2 digits or more
c) Change answers to decimals

1. Six pieces 1" x 6" x 36"
2. Twenty pieces 4/4" x 3" x 12'
3. Twelve pieces 4/4" x 4" x 24'
4. Five pieces 4/4" x 9" x 24"
5. 35 pieces 4/4" x 10" x 18'
6. 16 pieces 4/4" x 18" x 18'
7. Two pieces 4/4" x 8" x 27'
8. 6 pieces 6/4" x 18" x 18"
9. 3 pieces 4/4" x 10" x 33'
10. 24 pieces 3/4" x 12" x 22'
11. 4 pieces 4/4" x 5" x 60"
12. 8 pieces 8/4" x 2" x 28'
13. 5 pieces 6/4" x 7" x 54"
14. 3 pieces 5/4" x 4" x 48"
15. 6 pieces 8/4" x 5" x 96"
16. 18 pieces 1" x 8" x 12' - 0"
17. 5 pieces 2" x 4" x 16'-0"
18. 6 pieces 4" x 6" x 8'-0"
19. 12 pieces 2" x 8" x 12'-0"
20. 48 pieces 2" x 4" x 18'0"
21. 9 pieces 7/4" x 5" x 5'-4"
22. 4 pieces 4/4" x 8" x 7'
23. 10 pieces 1" x 15" x 8'-5"
24. 18 pieces 3/4" x 10" x 6'-8"
25. 6 pieces 8/4" x 7" x 9'-2"
26. 10 pieces 6/4" x 4" x 4'
27. 8 pieces 3/4" x 3" x 7'-4"
28. 20 pieces 5/4" x 6" x 10'-6"
29. 14 pieces 2" x 18" x 20'-0"
30. 5 pieces 8/4" x 12" x 12'-16"

Board Feet Worksheet #3

Find: # Square Feet $ per Sq.Ft. Work Answer

1. Plywood

a) 6' x 8' piece of 1/4" AD fir
b) 3" x 5" piece of 3/4" A-2 mahogany
c) 5' x 7' piece of 1/4" tempered pegboard
d) 3' x 8' piece of 1/8" un-tempered masonite
e) 4' x 6' piece of 1/4" tempered masonite
f) 7' x 8' piece of 3/4" A-2 birch

2. Kiln Dried Lumber Find: $ per Bd.Ft. Work Answer

a) 6 Bd. ft. of 2" Pine
b) 10 Bd. ft. of 1" Tennessee Cedar
c) 3 Bd. Ft. of 2" Phillippine Mahogany
d) 5 Bd. Ft. of 1" Eastern Maple
e) 9 Bd. Ft. of 2" Walnut
f) 16 Bd. Ft. of 1" Beech

3. Dowel Find: # of 4" lengths $ per 4" length Work Answer

a) 44" piece of 1/8" dowel
b) 32" piece of 5/16" dowel
c) 22" piece of 1/2" dowel
d) 31" piece of 5/8" dowel
e) 65" piece of 7/8" dowel
f) 82" piece of 1" dowel

4. Air Dried Framing Lumber - Fir Find: $ per Linear Ft. Work Answer

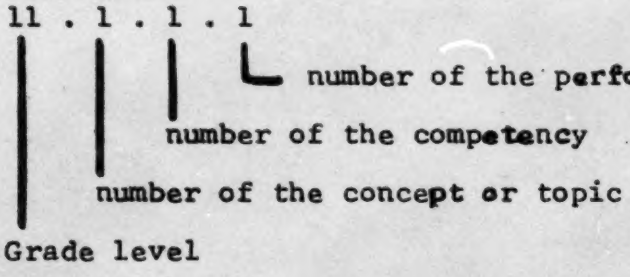
a) 9 feet of 1" x 4" framing
b) 12 feet of 1" x 10" framing
c) 13 feet of 2" x 2" framing
d) 18 feet of 2" x 6" framing
e) 22 feet of 2" x 8" framing
f) 25 feet of 2" x 12" framing

5. Exterior Plywood and Siding Find: $ per Sheet Work Answer

a) 5 sheets of 1/2" CDX
b) 7 sheets of 3/4" CDX
c) 16 sheets of 3/4" CDX
d) 16 sheets of T-111 3/8" Siding
e) 5 sheets of T-111 5/8" Siding
f) 8 sheets of T-111 5/8" Siding

CODING SYSTEM

There are four basic parts to the coding system separating the dots. The <u>first</u> section indicates the grade level, the <u>second</u> section indicates the concept or topic, the <u>third</u> section indicates the competency, and the <u>fourth</u> section indicates the performance indicator.



HIGH SCHOOL MATHEMATICS

9.1 Income, time cards, and payrolls

9.2 Installment buying

9.3 Buying in quantity, discount terms

9.4 Commission

9.5 Simple and compound interest

9.6 Estimating materials, invoices

9.7 Finding missing dimensions

9.8 Geometry cost problems and application

9.9 Tolerance

9.10 Triangulation

9.11 Board feet-calculating and cost

9.12 Capacity problems in excavation, brickwork and concrete mixtures

9.13 Buying a house

9.14 Property tax

9.15 Fire insurance

9.16 Promissory notes-bank discounts

9.17 Household bills

9.18 Reading gas and electric meters

COMPETENCIES	PERFORMANCE INDICATOR
9.1.1 The students will compute time cards into payrolls to determine income.	9.1.1.1 Given five time cards, the students will determine the proper income with 70% accuracy.
9.1.2 The students will compute incomes by the hour, day, week, month and year.	9.1.2.1 Given 10 annual salaries, the students will determine the monthly, weekly, daily, and hourly wage with 70% accuracy.
9.2.1 The students will find the monthly payments after subtracting the down payment and calculating the interest.	9.2.1.1 Given 10 different articles, the students will subtract the down payment, add the interest and determine the monthly payment with 70% accuracy.
9.2.2 The students will find how much you can save by paying cash verses installment buying.	9.2.2.1 Given 10 different articles, the students will calculate the deferred payment price and calculate how much they save on each article by paying cash with 70% accuracy.
9.3.1 The students will calculate how much you can save by buying in quantity as opposed to buying one object at a time.	9.3.1.1 Given 20 articles, the students will calculate the total cost of buying the articles one at a time and compare that price to buying the same articles in quantity with 70% accuracy.
9.4.1 The students will find commission, rate of commission and net proceeds when buying goods. (Real Estate.)	9.4.1.1 Given 20 different sales with the rate of commission known, the students will calculate the commission and net proceeds with 70% accuracy.
	9.4.1.2 Given 20 different sales with the commission known, the students will calculate the rate of commission with 70% accuracy.
9.5.1 The students will compute interest rate, principal and time using the i=prt formula.	9.5.1.1 Given 10 problems with the principal, rate and time known, the students will calculate the interest with 80% accuracy.
	9.5.1.2 Given 10 problems with the principal, rate and interest known, the students will calculate the time with 80% accuracy.
	9.5.1.3 Given 10 problems with the principal, interest, and time known, the students will calculate the rate with 80% accuracy.

	9.5.1.4 Given 10 problems with the interest, time and rate known, the students will calculate the principal with 80% accuracy.
9.5.2 The students will compute compound interest using the proper table.	9.5.2.1 Given 20 problems with the principal, rate and time given, the students will compute the compound interest using the proper table with 80% accuracy.
9.6.1 The students will estimate the amount of materials needed.	9.6.1.1 Given 20 material needed problems, the students will estimate within (+ or - 15% error) the amount of materials needed.
9.6.2 The students will estimate the cost of the above estimate.	9.6.2.1 Given the same 20 problems, the students will calculate the cost of each with 90% accuracy.
9.7.1 The students will compute the missing dimension of objects by indirect measurements.	9.7.1.1 Given eight different figures with various measurements given, the students will determine the missing dimension by indirect measurements with 90% accuracy.
9.8.1 The students will find areas, perimeter, and volume of geometrical objects.	9.8.1.1 Given 10 different shaped figures, the students will compute the areas, perimeter and volume of each with 70% accuracy.
9.8.2 The students will then compute the cost of the above measurements.	9.8.2.1 Given the cost figures for each of the last measurements, the students will calculate the cost for each measurement with 70% accuracy.
9.9.1 The students will define tolerance and give examples.	9.9.1.1 Given a tolerance of $\pm$ 1/8 inch, the student will be able to pick out of six examples which ones would be acceptable with 100% accuracy.
9.10.1 The students will define triangulation and compute problems giving examples.	9.10.1.1 Given the task of writing the definition of triangulation, the students will write it with 100% accuracy.
	9.10.1.2 The students will construct with 100% accuracy a figure showing triangulation.
9.11.1 The students will compute board feet.	9.11.1.1 Given the measurements of ten pieces of lumber, the students will compute the number of board feet with 90% accuracy.

9.11.2 The students will compute the cost once the board feet are determined.	9.11.2.1 After calculating the board feet of the ten pieces of lumber, the students will compute the cost with 90% accuracy.
9.12.1 The students will calculate capacity cost problems in excavation, brickwork and concrete.	9.12.1.1 Given five problems with the exact measurements, the students will calculate the amount of dirt and the cost of excavation with 80% accuracy.
	9.12.1.2 Given five problems with the exact measurements given, the students will calculate the amount and cost of bricks with 80% accuracy.
	9.12.1.3 Given five problems with the exact measurements given, the students will calculate the amount of concrete and the cost with 80% accuracy.
9.13.1 The students will calculate the cost of owning a home by determining the interest on mortgage, cost of repairs, depreciation, and interest lost on the principal paid.	9.13.1.1 Given the cost of ten different priced houses and all the proper information needed, the students will find the monthly cost of owning a home with 80% accuracy.
9.14.1 The students will calculate property tax.	9.14.1.1 Given ten different assessed values of homes and their respective tax rate, the students will calculate the taxes on property with 80% accuracy.
9.15.1 The students will calculate the cost of fire insurance for homes.	9.15.1.1 Given the value of ten different buildings and all proper information necessary, the students will calculate the total premium for each policy with 80% accuracy.
9.16.1 The students will compute bank discount and proceeds on promissory notes.	9.16.1.1 Given the values of ten different promissory notes, the rate of discount and term of discount, the students will find the bank discount and proceeds on each note with 80% accuracy.
9.17.1 The students will compute the amount of payment on gas, telephone and electric bills.	9.17.1.1 Given the copy of three different bills (gas, telephone, and electric), the students will calculate the amount of payment due on each bill with 100% accuracy.

9.18.1 The students will read gas and electric meters.	9.18.1.1 Given the diagrams of six gas meters and six electric meters, the students will give the correct reading on each with 90% accuracy.
9.18.2 The students will calculate the cost after having read gas and electric meters.	9.18.2.1 After reading the 12 meters, the students will calculate the cost of each in respect to the given rates with 90% accuracy.

INDUSTRIAL ARTS

Sandpaper - - - 17¢ per sheet
Sander belts - 70¢ per sheet

Plywood			per sq. ft.
Fir	1/4	AD	18¢
	3/8"	AD	23¢
	1/2"	AD	37¢
	3/4"	AD	34¢
Mahogany	3/4"	A-2	63¢
Birch	3/4"	A-2	70¢
	1/4"	A-2	45¢
Pegboard	1/8"	Tempered	13¢
	1/4"	Tempered	19¢
Masonite	1/8"	Un-Temp.	12¢
		Tempored	13¢
	1/4"	Un-Temp.	15¢
		Tempored	19¢

Dowel per 4" length	
1/8"	10¢
3/16"	12¢
1/4"	15¢
5/16"	19¢
3/8"	24¢
1/2"	42¢
5/8"	56¢
3/4"	99¢
7/8"	1.32
1"	1.67

Exterior Plywood and Siding

1/2" CDX	per sheet	5.12
3/4" CDX		8.64
T-111 Siding		
3/8"	Select	9.28
5/8"	Select	12.16

Contact Cement 7.60/Gal. 2.75/Qt.
Plastic Laminates 80¢ per sq. ft.

Lumber Kiln Dried	1"	2"	Price per Bd. Ft.
Pine	75¢	85¢	
Alder	52¢	55¢	
Ash	85¢	95¢	
Sweet Gum	90¢	--	
Tennessee Cedar	52¢	55¢	
Cherry	85¢	92¢	
Hawaiian Koa	70¢	78¢	
Philippine Mahogany	50¢	65¢	
Maple(East)	68¢	80¢	
Red Oak	78¢	98¢	
White Oak	78¢	98¢	
Walnut	1.35	1.50	
Birch	86¢	98¢	
Beech	60¢	--	

Air Dried Framing Lumber, Fir-per Lin.Ft.	
1x4	7¢
1x6	11¢
1x8	24¢
1x10	30¢
1x12	36¢
2x2	12¢
2x4	14¢ up to 20¢
2x6	21¢
2x8	28¢
2x10	40¢
2x12	48¢

Kiln dried Finish Material		
VG	$570.00	per thousand
Flat Grain	460.00	per thousand
Cedar	2x4	15¢
	2x6	26¢
	4x6	60¢
	4x8	68¢
	4x10	55¢
	4x12	58¢

Lath (1/4"x1-1/2"x3') 6¢ each

1. Find the amount of Board feet in the following:

   a) 1-1/2" x 6" x 9'

   b) 1-1/2" x 5" x 10'

   c) 12" x 1-1/2' x 16'

   d) 3/4" x 12' x 22'

   e) Two pieces
      4/4" x 8" x 27'

   f) Eighteen pieces
      1" x 8" x 12'

   g) Six pieces
      8/4" x 5/12' x 96"

   h) Six pieces
      6" x 6" x 8'

2. Find the price for each of the following:

   a) 5' x 8' piece of 3/4" AD Fir plywood

   b) 8 Bd. ft. of 2" Kiln dried Cherry lumber

   c) 25" piece of 3/4" dowel

   d) 12 linear feet of 1 x 12 Air Dried framing

   e) 3 sheets of 3/4" CDX exterior siding

COMMUNICATIONS

11.1 Technical terms

11.2 Reports and forms

11.3 Job resumes

11.4 Job descriptions

11.5 Table of contents and indexes

11.6 Taking notes and outlining

11.7 Composition skills

11.8 Paragraph development

11.9 Neatness

11.10 Speech delivery

11.11 Giving and taking directions

COMMUNICATIONS

COMPETENCIES	PERFORMANCE INDICATORS
11.1.1 The students will correctly spell vocabulary words related to the building construction cluster.	11.1.1.1 Given the vocabulary list from building construction, the student will spell the words correctly.
11.1.2 The student will define and/or indicate the use of all words and all abbreviations in the vocabulary list for building construction.	11.1.1.2 Given the vocabulary list from building construction, the student will define and/or use each word and each abbreviation correctly.
11.2.1 The student will fill out various reports and forms correctly.	11.2.1.1 Given a purchase order, the student will complete the form legibly, correctly, and completely.
	11.2.1.2 Given an accident report form, the student will complete the form legibly, correctly, and completely.
	11.2.1.3 Given a job application, the student will complete the form legibly, correctly, and completely.
	11.2.1.4 Given applications for Work Permits and for Social Security cards, the student will fill out each form legibly, correctly, and completely.
11.3.1 The student will write a job resume.	11.3.1.1 Given directions, the student will write a job resume to include personal information, education, work experience, hobbies, special awards, activities and organizations, and references.
11.4.1 The student will outline the main elements of a job description dealing with a building construction occupation.	11.4.1.1 Given reference materials, the student will outline the following information related to a building construction job: job title, duties, working conditions, educational or other requirements, salary, fringe benefits, advancements, outlook.
11.5.1 The student will use the table of contents of general information books and periodical literature.	11.5.1.1 Given manuals on operation of equipment and a specific topic to locate, the student will use the table of contents to find the information.

11.5.2 The student will use the index of a book to locate assigned topics.	11.5.2.1 Given specific books related to building construction, the student will use the index of each book to locate the exact pages of the topic assigned.
11.6.1 The student will organize notes into an outline.	11.6.1.1 While touring the construction site for the house, the student will note his observations.
	11.6.1.2 Given his notes on observation of the construction site for the house, the student will organize these notes into a two-level outline.
11.7.1 The student will omit use of fragments and run-on sentences.	11.7.1.1 Given the outline made on his observations of the construction site for the house, the student will describe the site in a paragraph which contains no fragments or run-on sentences.
11.8.1 The student will demonstrate various methods of paragraph development.	11.8.1.1 Following a tour of the building site for the house, the student will compose each of the following types of paragraphs based on his observations: model paragraph, roof and pillar paragraph, and funnel paragraph.
	11.8.1.2 Following observation of the house under construction, the student will write a chain paragraph describing a process which he observed.
11.9.1 The student will demonstrate neatness in all work to be graded.	11.9.1.1 Given any assignment, the student will turn in a neat, legible copy.
11.10.1 The student will demonstrate correct delivery techniques in giving a speech.	11.10.1.1 In giving a speech, the student will use good eye contact with the audience.
	11.10.1.2 In giving a speech, the student will enunciate well, pronouncing words correctly.
	11.10.1.3 In giving a speech, the student will project his voice in a manner appropriate to the size of the room in which the speech is being delivered.

11.10.2 The student will deliver a persuasive speech.	11.10.2.1 Assigned a topic to support, the student will deliver a speech meant to persuade the audience to agree with his position on the subject.
	11.10.2.2 Given an item to sell, the student will present a mock television commercial advertising that product.
11.10.3 The student will deliver an informative speech.	11.10.3.1 Assigned a topic, the student will deliver a speech describing a process.
11.10.4 The student will give graceful introductions to speakers.	11.10.4.1 Given a situation, the student will introduce the speaker in a poised manner appropriate to the situation.
11.10.5 The student will participate in a simulated job interview.	11.10.5.1 Assigned the role of either the interviewer or the interviewee, the student will participate appropriately in a mock job interview.
	11.10.5.2 During the interview, the student will demonstrate preparation and interest by submitting a completed job application and resume, by asking appropriate questions, and by choosing details to mention which would benefit his chances of being hired.
11.10.6 The student will evaluate speech performance and respond in a constructive manner to evaluations of his own performance.	11.10.6.1 Given a critique form, the student will rate content, eye contact, voice projection, and enunciation of other students' performances.
	11.10.6.2 Having received the evaluations of his performance, the student will make a list of ways of improving his next speech.
11.11.1 The student will give and follow instructions accurately.	11.11.1.1 Given a topic, the student will give accurate directions to a specified location or accurate instructions for a procedure to follow.
	11.11.1.2 Given another student's instructions, the student will carry out the specified directions correctly.

PHYSICS-CHEMISTRY

11.1 The use of simple machines

11.2 How heating and cooling changes materials

11.3 Second Law of Thermodynamics

11.4 Insulation in preventing heat loss (Transfer)

11.5 Heating systems for houses

11.6 Cooling systems for houses

11.7 Electricity for the home

11.8 Fire resistance of building materials

11.9 Protection from water (Use of desiccants and dehumidifiers)

11.10 Stress and strain

11.11 Sound absorption in homes

PHYSICS-CHEMISTRY

COMPETENCIES	PERFORMANCE INDICATORS
11.1.1 The students will describe the 3 types of levers in respect to fulcrum, effort and resistance.	11.1.1.1 The students will describe in writing the 3 types of simple machines with 100% accuracy.
11.1.2 The students will identify the different types of simple machines.	11.1.2.1 Given 10 different simple machines used on a house, the students will be able to identify the effort, resistance, and the fulcrum in 9 out of 10.
11.2.1 The students will identify which materials are most affected by changes in temperature.	11.2.1.1 Given a list of 20 different materials, the students will identify 10 which are most affected by temperatures.
11.3.1 The students will define the second Law of Thermodynamics.	11.3.1.1 The students will describe in writing the second law of Thermodynamics with 100% accuracy.
11.4.1 The student will define and give examples of insulation.	11.4.1.1 The students will give in writing the definition of insulation. 11.4.1.2 The students will list 5 different materials used in insulating a home.
11.4.2 The students will compare an uninsulated home with an insulated home during the winter months.	11.4.2.1 The students will describe in writing the comparisons of an uninsulated home with an insulated home during the winter months.
11.5.1 The students will define the three methods of heat transfer and give examples of how they are used in the home.	11.5.1.1 The students will describe in writing three methods of heat transfer from furnaces and heaters into the rooms of a home. 11.5.1.2 Given three different heating systems in housing, the students will match the method of heat transfer with the heating system in all three cases.
11.6.1 The students will describe the process of air conditioning in the home.	11.6.1.1 Given a simplified diagram of an air conditioning system, the student will describe in writing how it operates to keep a home cool with 100% accuracy.

11.7.1 The students will understand what wires you connect to get a 110 volt flow or a 220 volt flow.	11.7.1.1 The student will describe in writing the three wire system for wiring a house.
11.7.2 The students will understand the function of a fuse or circuit breaker in an electric circuit.	11.7.2.1 The students will describe in writing how a fuse or circuit breaker works in protecting your home.
11.8.1 The students will recall the classification of building materials with regard to fire resistance.	11.8.1.1 The students will list the 4 ways that buildings are classified with regard to fire resistance.
11.9.1 The students will understand the effects of desiccants and dehumidifiers in protecting a house from water damage.	11.9.1.1 The students will describe in writing how desiccants and dehumidifiers protect a home from water damage.
11.10.1 The students will understand the terms stress and strain as they apply to building materials for housing.	11.10.1.1 The students will describe in writing the properties of stress and strain when selecting building materials.
11.11.1 The students will understand how rooms can be designed so sounds can be easily heard and clearly understood.	11.11.1.1 The students will describe in writing how rooms in buildings can be designed in order to reduce the reflection of sounds.

ART

1.1 Identification, classification, and samples of color

1.2 Communication, demonstration, and principles of silk screen

1.3 Skills in calligraphy

1.4 Demonstration, identification, and printing of photography

ART

1.1 Color
1.2 Silk Screen
1.3 Calligraphy
1.4 Photography

1.1.1 The student will be able to identify all colors on the color wheel.

1.1.1.1 Given a color wheel the student will identify all primary, secondary and tertiary hues.
1.1.1.2 Given the primary hues the student will produce secondary hues.
1.1.1.3 Given all secondary and primary hues the student will produce tertiary hues.
1.1.1.4 Given two complimentary hues the student will produce a neutral.

1.1.2 The student will be able to identify and produce examples of all the color schemes.

1.1.2.1 Given examples of all of the color schemes the student will identify each with 70% accuracy.
1.1.2.2 Given a range of colored items the student will produce an example of a monochromatic color scheme.
1.1.2.3 Given a range of colored items the student will produce an analogous color scheme.
1.1.2.4 Given a range of colored items the student will produce an complementary color scheme.
1.1.2.5 Given a range of colored items the student will produce a split-complementary color scheme.
1.1.2.6 Given a range of colored items the student will produce a double-complementary color scheme.

1.1.3 The student will be able to identify classifications of value in a color: tints, shades and gradations.

1.1.3.1 Given examples of a tint, shade and gradation of a color the student will identify each with 100% accuracy.
1.1.3.2 Given several examples of tints and shades of a color the student will arrange them in a gradation from near white to near black with 90% accuracy.
1.1.3.3 Given the materials the student will produce several tints of one color and organize them in a gradation from lightest to darkest.
1.1.3.4 Given the materials the student will produce several shades of one color and organize them in a gradation from lightest to darkest.

1.2.1. The student will be able to use imagery as an essential part of graphic communication.

1.2.1.1 Given a specific verbal communication the student will create an illustration that would best describe it using the elements of color, shape, value and line.

1.2.2 The student will demonstrate his knowledge of the elements and principles of design in printing.

1.2.2.1 Given any of the elements of design the student will utilize the principles of design to organize his graphic statement.

1.2.3 The student will demonstrate some of the commercial uses of printmaking.

1.2.3.1 Given the materials the student will print several examples of advertising posters for the house project.

1.3.1 The student will demonstrate calligraphic skills that are used in commercial design.

1.3.1.1 Given a specific assignment the student will produce some type of calligraphic lettering for advertising of the house project.

1.4.1 The student will identify parts of an adjustable camera.

1.4.1.1 Shown an adjustable camera the student will identify each part with 100% accuracy.

1.4.2 The student will identify parts of an enlarger.

1.4.2.1 Shown an enlarger the student will identify each part with 100% accuracy.

1.4.3 The student will demonstrate the various steps in film development for B&W.

1.4.3.1 Given the materials the student will develop several rolls of B&W film.

1.4.4 The student will demonstrate the elements and principles of design in photographs taken.

1.4.4.1 Given a camera the student will take several sequential photographs of the house project.

1.4.5 The student will demonstrate the various stages in printing B&W photographs.

1.4.5.1 Given the materials the student will develop several sequential photographs of the house project to be put in a scrapbook.

PHYSICAL EDUCATION

12.1 Physical movement for development of muscles, strength, power

12.2 Posture

12.3 Body means of lifting, carrying, moving and reaching

12.4 Safety and emergency principles

12.5 Positive social interaction - leader and follower roles

12.6 Health habits

PHYSICAL EDUCATION

COMPETENCY	PERFORMANCE INDICATOR
12.1.1 The student will be able to perform movement activities for the development of: muscular endurance, strength, power, and neuro-muscular skills involving: agility, balance, posture, flexibility, and coordination.	12.1.1.1 The student will maintain an increased heart rate without undue fatigue.
	12.1.1.2 The student will show an improvement in strength of the neck, shoulder and arms as determined by pre-test to post-test.
	12.1.1.3 The student will lift weights at the bench press at the beginning of the terms and through repetition shall increase the weight (per cent) of body weight by the end of the term.
	12.1.1.4 The student will perform to an acceptable degree of proficiency the University of Illinois Physical Fitness Test. (Tests aforementioned qualities.)
12.2.1 The student will be able to recognize the proper alignment of body parts as they relate to posture and efficient movement.	12.2.1.1 The student will identify with 100% accuracy the alignment of body segments of person standing beside plumb line.
12.3.1 The student will be able to recognize and perform body movements in the most efficient manner.	12.3.1.1 The student will perform in an acceptable degree of proficency: (1) The most efficient method of lifting and carrying large and heavy objects, such as a 90 lb. bag of cement, a 4x8 piece of sheetrock, and a 4x12x12 piece of lumber. (2) The most efficient method of painting a ceiling with a long handled roller. (3) The most efficient method of moving appliances and furniture with the aid of another individual. (4) The most efficient method of reaching and exerting some effort for an extended period of time.
	12.3.1.2 The student will identify 5 positive results of proper posture, including one relating to employer-employee relationship.

12.4.1 The student will be able to identify, and utilize the principles of safety for self and others.	12.4.1.1 Given a game or activity situation, the student will explain and demonstrate proper safety procedures, such as: (1) Wearing safety equipment and clothing, (2) Being alert as to the whereabouts of people and playing objects, (3) Using safe and properly cared for equipment, (4) taking necessary safety precautions in the performance of dangerous activities, such as using a training belt on trampoline, spotters in gymnastics, etc.
	12.4.1.2 Given an emergency situation which involves one of the following, the student will describe the method of treatment and protection of the victim: (1) Shock, (2) Severe laceration, (3) Fracture, (4) Movement of person pinned beneath heavy object.
12.5.1 The student will be able to demonstrate positive social interaction, working together in leader and follower roles.	12.5.1.1 Given a problem situation, as a game or activity, the student will describe at least 2 ways of solving the problem.
	12.5.1.2 The student, given the opportunity, will assist a partner in learning a new skill.
	12.5.1.3 The student will, with a partner, devise and explain and get the class to participate in a game activity.
	12.5.1.4 The student will officiate a game or activity of his choice with an acceptable degree of proficiency.
12.6.1 The student will be able to recognize and describe health habits and attitudes essential to healthful living.	12.6.1.1 The student will describe 5 negative effects of a person smoking and drinking on a construction job.
	12.6.1.2 The student will describe what precautions should be taken in the event of a cut on the hand, to prevent infection.
	12.6.1.3 The student will list 5 physically appealing characteristics that a prospective employer might take into consideration when hiring a carpenter.

12.6.1.4 The student will describe the possible effects of improper nutrition and rest on a physical laborer.

BUSINESS

12.1 Reading and interpreting time cards

12.2 Payroll deductions

12.3 Preparation of payroll (i.e. check writing, check protecting, etc.)

12.4 Preparation and use of W-2 form

12.5 Typing, erasing, filing of purchase order

12.6 Business forms

12.7 Purchase order payment

12.8 Cash transfer - from savings to checking account

12.9 Cost analysis of total costs

12.10 Business forms and duplication

12.11 Accounting cycle - - balancing ledgers with journals

BUSINESS

COMPETENCY	PERFORMANCE INDICATOR
12.1.1 The student will be able to read and interprete a time card.	12.1.1.1 Given a time card, the student will compute the gross earnings--regular and overtime with 95% accuracy.
12.2.1 The student will be able to prepare the deductions of a payroll.	12.2.1.1 Given the earnings, the student will determine FICA, State tax, Federal tax, SAIF, Union dues, and other deductions.
12.3.1 The student will be able to prepare the necessary materials for the payroll procedures.	12.3.1.1 The student will prepare a payroll register and individual payroll register for each payrollee and write wage checks.
	12.3.1.2 The student will demonstrate the use of the check protector in the use of payroll checks.
12.4.1 The student knows the use and preparation of a W-2 form.	12.4.1.1 The student will prepare a W-2 form listing all wages and deductions for all payrollees.
12.5.1 The student will be able to type information on a purchase order.	12.5.1.1 Given a requisition in unarranged form, the student will be able to type in proper format and produce a mailable purchase order.
	12.5.1.2 The student, given the appropriate erasing materials, will be able to make mailable corrections.
	12.5.1.3 The student will be able to separate and file the purchase order correctly.
12.6.1 The student will know the function of various business forms (examples: requisition, bid sheets, cash transfer, time card, etc.)	12.6.1.1 Shown various forms, the student will be able to recite their purpose and typing instructions with 100% accuracy.
12.7.1 The student will be able to use the proper procedure in paying purchase orders.	12.7.1.1 The student will be able to figure purchase order discounts and write the checks on the Burrough's Pegboard system.
	12.7.1.2 The student will demonstrate his/her ability to use the check protector.

12.8.1 The student will know the purpose and correct procedure in typing a cash transfer.	12.8.1.1 Given a set of purchase orders, the student will prepare and type two (2) copies of a cash transfer in mailable form.
12.9.1 The student will prepare a cost analysis of total purchase orders paid.	12.9.1.1 Given the Burrough's Pegboard system and ledgers, the student will be able to prepare a monthly cost analysis giving break-downs of costs in the various accounting categories.
	12.9.1.2 The student will be able to type the cost analysis on a spirit master and duplicate in mailable form.
	12.9.1.3 The student will be able to identify the accounting categories.
12.10.1 The student will devise the necessary forms for the use in the building construction program.	12.10.1.1 Given information dealing with the purchase order or payroll procedures, the student will devise the necessary forms for building construction in mailable format.
	12.10.1.2 The student will be able to type these forms on a spirit master or stencil--discretion left to the instructor.
12.11.1 The student will update and balance the ledgers with the cost analysis and Burrough's Pegboard system.	12.11.1.1 Given the cost figures on the Burrough's Pegboard system, the student will balance the ledger categories with those on the cost analysis (monthly.)

ADVANCED AGRICULTURE

11.1 Excavation and dirt fill

11.1 Identification, function, landscaping of common trees and shrubs

11.3 Improvement of a landscape plan

11.4 Grading, drainage, soil samples, concrete mixtures and sprinkler systems on the landscaped site

11.5 Mulching and watering of common trees and shrubs

11.6 Seeding and mulching of a lawn.

ADVANCE AGRICULTURE

COMPETENCY	PERFORMANCE INDICATOR
11.1.1 The student will be able to prepare the lot for excavation using a farm level or transit.	11.1.1.1 Given the lot and transit, the student will be able to figure out the fill required to properly build a house on the site.
11.2.1 The student will be able to correctly identify common trees and shrubs.	11.2.1.1 Given pictures or slides of trees and shrubs and a list of the names of trees and shrubs, the student will match the visual to the correct label.
11.2.2 The student will be able to select trees and shrubs appropriate to a specific landscape plan.	11.2.2.1 Given a landscape plan, calling for trees and shrubs by physical size and shape, the student will name the appropriate plant.
11.2.3 The student will be able to select trees and shrubs according to specific functions.	11.2.3.1 Given a list of trees and shrubs classified by shape, growth characteristics, and texture, the student will indicate the best use of each plant.
11.3.1 The student will be able to prepare a landscape plan.	11.3.1.1 Given a specific site, the student will draw a plan showing location, types, size and variety of trees and shrubs.
11.3.2 The student will be able to indicate areas that need improvement at a specific landscape site.	11.3.2.1 Given a specific site, the student will draw a plan indicating all areas in need of improvement.
11.4.1 The student will be able to indicate on a landscape plan the areas in need of grading or drainage.	11.4.1.1 Given a landscape plan, the student will label the areas which appear to need grading in order to achieve adequate drainage.
11.4.2 The student will be able to demonstrate the procedure for collecting a representative soil sample, preparing it for analysis and interpreting the results of analysis.	11.4.2.1 Each student will collect soil samples, subject them to soil analysis, and interpret the results of the test. 11.4.2.2 Given soil test results and fertilizer recommendation sheets, the student will give amount and type of fertilizer to use.

11.4.3 The student will be able to construct walls, patios, walks and/or other landscape structures according to recommended procedures.	11.4.3.1 Given materials, the student will mix concrete to be used to construct a walk in a planned landscape site. 11.4.3.2 Given materials the student will construct a fence on landscaped site.
11.4.4 The student will be able to figure out the amount of pipe and the proper placement of the pipe in a lawn sprinkler system.	11.4.4.1 Given a specific landscape plan the student will prepare a plan and construct a sprinkler system for that site.
11.4.5 The student will demonstrate a knowledge of sterilizing soil where such practices are needed.	11.4.5.1 Given a specific plan the student will prepare a list of chemicals and the procedure for applying them to sterilize the soil.
11.5.1 The student will know the procedure for transplanting trees and shrubs which are bareroot, bolled or burlapped.	11.5.1.1 The student will list the procedures to follow for properly transplanting trees and shrubs.
11.5.2 The student will demonstrate knowledge of the recommended methods of watering newly planted trees and shrubs.	11.5.2.1 Given pictures of recently watered trees or shrubs, the student will indicate those that are properly watered and those that are "over watered."
11.5.3 The student will be able to demonstrate knowledge of procedure for mulching trees and shrubs.	11.5.3.1 Given a list of mulching materials, the student will indicate acceptability in each of the following areas; availability cost, appearance, durability, decomposition, danger of diseases, fire hazard.
11.6.1 The student will be able to demonstrate knowledge of the proper method of seeding a lawn,	11.6.1.1 Given a specific lawn site, the student will list the steps necessary in preparing and planting the lawn; leveling, cultivation, seeding cuts, sewing needs, covering seed, mulching seeded area, watering.
11.6.2 The student will be able to demonstrate knowledge of the proper method for mulching a newly seeded lawn.	11.6.2.1 The student will list the technique for mulching a newly seeded area: moisten mulch 24 to 48 hours before application, apply mulch "two straws" thick, apply fifty pounds of straw per 1000 sq. ft., cover mulch if erosion may be a problem.

HOME ECONOMICS

11.1 Principles and elements of design and housing

11.2 Trends in housing

11.3 The selection of housing

11.4 Building codes

11.5 Floor plans and blueprints

11.6 Total dwelling---construction

11.7 Evaluation of dwellings

11.8 Planning furnishings and equipment for the residence

11.9 Selecting furnishings

HOME ECONOMICS

COMPETENCY	PERFORMANCE INDICATOR
11.1.1 The student will have an understanding of the principles and elements of design as related to housing and home furnishings.	11.1.1.1 The student will list and describe the principles and elements of design.
	11.1.1.2 The student will explain the importance of the principles and elements of design to the overall construction and decoration of a house.
	11.1.1.3 The student will explain the importance of the principles and elements of design to construction details, interior decoration (with an emphasis on color), and furnishings.
	11.1.1.4 The student will evaluate floor plans, elevations and interiors according to the principles and elements of design.
	11.1.1.5 The student will evaluate the floor plan for the building construction house project according to the principles and elements of design.
11.2.1 The student will be able to list factors affecting current trends in housing (e.g., increased population, construction costs, changing values, etc.)	11.2.1.1 The student will list factors affecting current trends in housing with emphasis on the local area.
11.3.1 The student will be able to list factors influencing selection of housing (e.g., cultural environment, economic values, physical and social needs.)	11.3.1.1 The student will identify factors influencing the selection of housing in this locality.
	11.3.1.2 The student will evaluate how these factors will influence the housing project and make recommendations for design and furnishing accordingly.
11.4.1 The student will be able to locate local and state regulations controlling housing construction (e.g., sewage disposal, size of lot, type and placement of dwelling, etc.)	11.4.1.1 The student will list local and state regulations controlling housing construction.
	11.4.1.2 The student will identify the regulations directly affecting the construction of the housing project.

11.5.1 The student will be able to understand information available on a floor plan (e.g., location and size of interior partitions, doors, windows, stairs, fireplaces, electrical outlets, plumbing fixtures, etc.)	11.5.1.1 The student will be able to explain the information available on a floor plan. 11.5.1.2 The student will identify blueprint symbols. 11.5.1.3 Given the building construction class floor plan for the housing project, the student will be able to read and interpret that plan.
11.5.2 The student will be able to recognize the advantages and disadvantages of various types of floor plans (e.g., ample electrical outlets, convenience of kitchen, bath and entrances to other areas, storage space, door locations, traffic patterns, etc.)	11.5.2.1 The student will be able to list the factors leading to efficient floor plans. 11.5.2.2 The student will be able to evaluate the advantages and disadvantages of the floor plan used by the building construction class. 11.5.2.3 The student will be able to explain the importance of and evaluate the work triangle in relation to the floor plan used by the building construction class. 11.5.2.4 The student will evaluate the traffic patterns for each room of the blueprints being used by the building construction class for the housing project. 11.5.2.5 The student will make recommendations to the building construction class according to their evaluations.
11.6.1 The student will be able to identify a variety of building materials available for housing. (e.g., wood, glass, aluminum, foam, brick, concrete, etc.)	11.6.1.1 Given a variety of building materials for housing the student will identify each and state where each is used. 11.6.1.2 The student will be able to recommend materials to use in the construction of a house in this locality. 11.6.1.3 The student will evaluate the choice of building materials to be used in the construction of the house project by the building construction class.

11.6.2 The student will be able to identify characteristics of high quality construction (e.g., materials, workmanship, etc.)	11.6.2.1 The student will observe and evaluate the construction of the house project by the building construction class.
	11.6.2.2 The student will identify factors listed in the local building code which control the quality of construction.
11.7.1 The student will be able to identify factors to consider in the evaluation of dwelling plans (e.g., location, circulation and traffic patterns, orientation, storage facilities, organization of space, etc.)	11.7.1.1 The student will list the factors to consider in evaluating floor plans.
	11.7.1.2 The student will evaluate the floor plan in use by the building construction class according to these factors.
11.8.1 The student will be able to identify factors involved in selecting equipment and furnishings for the home (e.g., cost, quality, financing procedures, etc.)	11.8.1.1 Given a list of equipment and furnishings the student will list the factors involved in evaluating each.
	11.8.1.2 The student will list factors to consider in selecting equipment and furnishings specific to the building construction house project.
11.9.1 The student will be able to understand consumer techniques when purchasing furnishings (e.g., comparative shopping, evaluation criteria, etc.)	11.9.1.1 The student will identify consumer techniques to use when purchasing furnishings.
	11.9.1.2 The student will investigate and make recommendations concerning furnishings (light fixtures, carpeting, appliances, etc.) to be installed in the house project by the building construction class.
11.9.2 The student will be able to identify factors affecting window furnishing selection (e.g., light, ventilation, window design, fabric, etc.)	11.9.2.1 The student will list the factors to consider when determining appropriate window treatments.
	11.9.2.2 The student will determine appropriate window treatments to be used in the house being built by the building construction class.
11.9.3 The student will be able to recognize factors affecting door selection (e.g., function, style, etc.)	11.9.3.1 The student will list the factors influencing door selection.
	11.9.3.2 The student will select door designs to be used for the house project.

11.9.4 The student will have an understanding of the factors influencing cabinet selection.

11.9.4.1 The student will list the factors influencing the selection of cabinets to be used in various rooms of a house.

11.9.4.2 The student will select cabinet styles appropriate for installation in the housing project.

OCCUPATIONAL VERSATILITY

10.1 Utilization of materials, tools, layout, techniques of a sheet metal project

10.2 Bending techniques

10.3 Fastening procedures - riveting, seaming or interlocking joints, welding, and soldering

10.4 Preparation of metal for painting

10.5 Painting techniques

10.6 Use and care of hand tools

10.7 Use and care of power equipment

10.8 Identification of basic woods

10.9 Demonstration of project planning and procedures

OCCUPATIONAL VERSATILITY

COMPETENCY	PERFORMANCE INDICATOR
10.1.1 The student will plan and complete a sheet metal project.	10.1.1.1 Given a project to do, the student will select the proper materials.
	10.1.1.2 Given a project to do, the student will use proper tools for the project.
	10.1.1.3 Given a project, the student will use proper layout procedures.
	10.1.1.4 Given a project, the student will keep within minimum tolerances.
	10.1.1.5 Given a project, the student will layout pattern on metal using proper techniques.
10.2.1 The student will learn proper bending techniques.	10.2.1.1 Given material and tools, the student will demonstrate proper bar folding techniques.
	10.2.1.2 Given materials and tools, the student will demonstrate proper box and pan brake bending techniques.
	10.2.1.3 Given materials and tools, the student will demonstrate correct use of the slip roll forming machine.
	10.2.1.4 Given materials and tools, the student will correctly demonstrate turning for wire edge, burring, heading, and crimping.
10.3.1 The student will use proper fastening procedures.	10.3.1.1 Given materials and tools, the student will rivet correctly.
	10.3.1.2 Given material and tools, the student will demonstrate seaming or interlocking joints.
	10.3.1.3 Given materials and tools, the student will solder seams and/or lap joints.
	10.3.1.4 Given material and tools, the student will spot weld joints.

10.4.1 The student will prepare metal for painting.	10.4.1.1 Given metal, the student will clean the metal removing all acids and grease.
10.5.1 The student will demonstrate correct painting techniques.	10.5.1.1 Given a finished project, the student will demonstrate correct spraying techniques.
	10.5.1.2 Given a finished project, the student will demonstrate correct painting techniques.
10.6.1 The student will use and care for hand tools of the woodworking trade.	10.6.1.1 Given tools and materials, the student will build a simple project using hand and power tools.
	10.6.1.2 Given various tools, the student will disassemble and sharpen tools, reassemble and adjust for cutting action.
10.7.1 The student will be able to use and care for power equipment of the woodworking trade.	10.7.1.1 Given power tools of the trade, the student will construct complex projects, employing safety methods and procedures.
10.8.1 The student will be able to identify basic woods.	10.8.1.1 The student will identify 7 species of wood.
10.9.1 The student will be able to demonstrate basic project planning and procedures.	10.9.1.1 Given a project planning and procedure form, the student will show correct steps and procedures, equipment used, a sketch with pertinent measurements, materials list and cutting bill.

DRAFTING

10.1 Technical terms

10.2 Sketching -- freehand and block

10.3 Isometric views

10.4 Working drawings

10.5 Builders level

10.6 Working house plans -- blueprints

10.7 Specification sheets

10.8 Door and window schedule

10.9 Materials

DRAFTING

COMPETENCY	PERFORMANCE INDICATORS
10.1.1 The student will be able to use correct terminology.	10.1.1.1 Given a list of terms of the drafting trade. the student will demonstrate correct use by talking, writing correct titles, using correct symbols on drawings.
10.2.1 The student will be able to sketch.	10.2.1.1 Given directions, the student will demonstrate basics of free-hand sketching and block sketching.
10.3.1 The student will be able to draw isometric views.	10.3.1.1 Given an exercise to do, the student will draw and sketch isometric views.
10.4.1 The student will be able to draw working drawings.	10.4.1.1 Given exercises, the student will draw working drawings of various projects.
10.5.1 The student will be able to use a builders level.	10.5.1.1 Given an assignment, the student will set up builders level, shoot grades, right angles, and square of building lines.
	10.5.1.2 Given above results, the students will take grades and draw a topographical map.
10.6.1 The student will be able to draw a set of working house plans of a house.	10.6.1.1 The student will plan, size and proportion a house plan.
	10.6.1.2 The student will draw a floor plan.
	10.6.1.3 The student will draw front, side, and rear elevations.
	10.6.1.4 The student will draw a plot plan.
	10.6.1.5 The student will draw a foundation plan.
	10.6.1.6 The student will draw electrical, plumbing, and heating plans.
10.7.1 The student will be able to prepare specification sheets.	10.7.1.1 Given exercises, the student will prepare specification sheets.

10.8.1 The student will be able to prepare door and window schedules.	10.8.1.1. Given measurements, the student will prepare door and window schedule for a house plan.
10.9.1 The student will be able to prepare a materials list.	10.9.1.1 Given measurements on a house plan, the student will prepare a materials list.

CONSTRUCTION CLUSTER

COMPETENCY	PERFORMANCE INDICATOR
11.1.1	11.1.1.1
Orientation: Job opportunities exposed to:	Lectures and films and field trips to job sites at appropriate times.

Carpentry
- a. Framing
- b. Finishing

Concrete
- a. Forming
- b. Placing
- c. Finishing

Cabinetmaking

Laminates - Installation

Tile and linoleum laying

Carpet laying

Plumbing
- a. Rough-in
- b. Top-out
- c. Trim out

Heating and Sheetmetal
- a. Rough-in
- b. Set furnace and grills
- c. Gutter and down spouts
- d. Flashing

Electrician
- a. Rough-in
- b. Trim-out

Roofing
- a. Shakes
- b. Wood shingles
- c. Composition shingles
- d. Built up hot roof
- e. Tile
- f. Metal (corrigated)

Painting
- a. Exterior
- b. Interior
- c. Lacquer and varnish

Sheetrock and plastering

Masonry

11.1.2 Evaluation Pre-testing Post-testing	11.1.2.1 Student will take pre-test to determine level of knowledge of the building trade. Student will take same pre-test at the end of school year to measure progress.
11.2.1 Safety	11.2.1.1 Student will listen to lectures, view safety films. Speakers from SAIF Posters on job site. Dress for job, hard hat, hard toe shoes. 11.2.1.2 Common sense behavior using Hand tools and power hand tools, Power machines, scaffolding and ladders. 11.2.1.3 Practice safety procedures on the job site and report unsafe equipment and practices to instructor.
11.3.1 Blueprint interpretation	11.3.1.1 The student will interpret plot plan for placing building on lot, to specifications of the local building code. 11.3.1.2 Will interpret measurements and apply to layout and excavation of footing and foundation for building. 11.3.1.3 Scale blueprint for details of framing and/or forming for concrete installation. 11.3.1.4 Apply reinforcing steel as specified on blueprint and specified by local building code.
11.4.1 Reading assignments	11.4.1.1 Students will read appropriate units, prior to application, and answer self help questions at end of each unit in writing.
11.5.1 Temporary power service and post building permit.	11.5.1.1 Locate temporary power service on site appropriate for construction of building. 11.5.1.2 Post building permit on or near temporary power service for periodic inspection by the building inspector.

11.6.1 Use of builders level Care Setting up Sighting Leveling Reading degrees Run a straight line Plot 90° Use of a plumb bob	11.6.1.1 Use transit or builders level: in noting elevations and grade cuts for excavation, and locating building on site with proper set-backs conforming with local building code. 11.6.1.2 Setting forms for footings and foundation walls. 11.6.1.3 Cutting and setting pier posts for beam construction.
11.7.1 Staking and layout City or county plot plan Compass work Batter boards 6-8-10 method of squaring Diagonals House placement	11.7.1.1 Will construct batter boards for squaring building lines. 11.7.1.2 Will use building lines properly, and have building properly located on lot according to code and specifications.
11.8.1 Excavation	11.8.1.1 Stake out area to be excavated, marking grade cuts on stakes, using builders level and rod. 11.8.1.2 Take grades to assist excavator.
11.9.1 Footings and Foundations, piers, fireplace footings and planter base, vapor barrier.	11.9.1.1 Install vapor barrier before forming footings and foundation walls and pier pads. 11.9.1.2 Place reinforcing steel where necessary, call for inspection before pouring concrete. 11.9.1.3 Estimate concrete by figuring cubic yards needed and order. 11.9.1.4 Place concrete in forms carefully and level off for mud sill, placing anchor bolts as per building code.
11.10.1 Flatwork concrete, patios, garage floor, driveway, sidewalks, ramps.	11.10.1.1 Compacting crushed rock fill under concrete pour, form, install reinforcing and pour concrete, rod off excess, remove screens and fill void, tamp with jitterbug to aid in a smooth finish.

11.11.1 Pour concrete, trowel, and finish.	11.11.1.1 Using proper tools of the trade float and trowel concrete to smooth finish, brush with broom if brush finish desired. Use of edger and creaser where needed. Finish as per specifications.
11.12.1 Stripping forms after concrete is set.	11.12.1.1 Will strip and clean forms of nails and concrete, oil and stack for next pour.
11.13.1 Beams and posts	11.13.1.1 Using builders level, will measure and cut pier posts for each pier and join beams over a post, heading out necessary openings, i.e., fireplace, furnace, etc.
	11.13.1.2 Brace beams straight with either headers between beams, for fastening plumbing and heat ducts, or temporary braces above. (if applicable)
11.14.1 Joist construction	11.14.1.1 Apply floor joist and band joist as specified on blueprint, and apply bridging as specified. (if applicable)
11.15.1 Plumbing rough-in	11.15.1.1 Assist plumber in installation of plumbing rough-in, aide in necessary headers and frame-out, observing plumbing methods and techniques.
11.16.1 Heating rough-in	11.16.1.1 Assist heat and sheetmetal worker in installing rough-in for heating ducts and plentom, observe and assist, learning techniques and methods of application.
11.17.1 Storm drain	11.17.1.1 Will install storm drain around perimeter of footing, for roof drains, before backfilling.
11.18.1 Backfill and rough grading	11.18.1.1 Will backfill to within 7-8" of bottom of siding or to bottom of foundation vents, covering storm drain pipe. Using appropriate equipment.
11.19.1 Sub-floor	11.19.1.1 Lay sub-floor of tongue and groove decking, toe-nailing and surface nailing as specified, (if applicable)
	11.19.1.2 Lay 2-4-1 decking (1 1/8" plywood) and nail as directed.

	11.19.1.3 Apply 3/4" sub-sheathing, plywood or shiplap whichever applicable and nail as directed.
11.20.1 Pre-cutting framing materials	11.20.1.1 Prepare cutting lists of: plates, studs, trimmers, cripples, sills, headers, ceiling joists, rafters as needed for job.
	11.20.1.2 Will cut to length, the above lists with necessary allowances.
11.21.1 Layout and framing exterior walls and then interior walls	11.21.1.1 Layout plates with appropriate tools of the trade with pencil, type, and square using appropriate symbols of the trade.
	11.12.1.3 Join plates over studs or header and trimmers and/or cripples as appropriate.
	11.21.1.3 Assemble plates, headers, trimmers, cripples and sills as per plan. Nailing as appropriate to trade and specifications.
	11.21.1.4 Square wall section and apply bracing, or apply sub-sheathing, whichever applicable, raise, plumb and brace and nail into place.
11.22.1 Bracing and double plating	11.22.1.1 Plumb and brace all walls straight, and double plate, lapping all intersecting walls for tie. Nail over studs and headers, not between studs where other trades may have to bore holes. Re-check alignment of walls, make necessary adjustments.
11.23.1 Layout ceiling joist and rafters	11.23.1.1 Layout joist and rafter locations with pencil tape and square, marking with appropriate building symbols.
11.24.1 Install tub, shower or large fixtures	11.24.1.1 Install large permanent fixtures, too large to go through doors, i.e. tub, shower stall, etc.
	11.24.1.2 Cover fixtures with plywood or cardboard for protection.
11.25.1 Ceiling joists	11.25.1.1 Install joist, nailing on appropriate location (symbol marking) on outside and interior walls.

11.26.1 Backing and nailing blocks	11.26.1.1 Nail backing blocks over interior walls, not backed by joist, for sheetrock or plaster board.
	11.26.1.2 Nail backing alongside windows for curtain rods, flush with inside of wall, each end of header.
11.27.1 Install rafters	11.27.1.1 Install rafters and nail appropriately on plate and ridge board.
	11.27.1.2 Nail those rafters along side of joists together for further strength.
11.28.1 Facia and varge rafters	11.28.1.1 Install facia on end of rafters and install varge rafters.
	11.28.1.2 Brace roof for sheathing, aligning rafters.
11.29.1 Purlins, king posts	11.29.1.1 Install purlins to underside of rafters to shorten span, and align rafters.
	11.29.1.2 Install king posts from purlin to bearing walls.
11.30.1 Gable studs	11.30.1.1 Layout and install gable studs where needed, framing out for gable end vents.
11.31.1 Sheath gables	11.31.1.1 Sheath gable ends or apply siding as per specifications.
11.32.1 Sheath roof	11.32.1.1 Sheath roof with plywood, or stripping as per specifications.
11.33.1 Hip roof	11.33.1.1 Install valley, hip, jack, common, hip to ridge, rafters as per plan, and sheath.
11.34.1 Vapor barrier	11.34.1.1 Apply vapor barrier over plywood or stripping before applying roofing.
11.35.1 Roofing, wood shakes, wood shingles, composition, built up hot roof, tile	11.35.1.1 Apply roofing as directed, using appropriate tools of the trade.
	11.35.1.2 Install proper gravel guard on edges of built-up roof, nailing base sheet, and hot mopping between successive layers.

11.36.1	Flashing	11.36.1.1 Install chimney flashing over frameout in roof for fireplace or chimney.
11.37.1	Vapor barrier on walls	11.37.1.1 Install vapor barrier on exterior walls before installing exterior doors and windows and siding.
11.38.1	Exterior doors and windows	11.38.1.1 Install windows and doors plumbing and leveling, aligning windows, and nail as specified. Apply flashing as needed for weather protection.
11.39.1	Apply siding	11.39.1.1 Apply siding breaking joints on a stud, nailing with galvanized nails as specified. Caulk joints as needed. Remove excess caulking before painting or staining.
11.40.1	Fireplace or masonry	11.40.1.1 Students will assist mason in laying block, brick, stone.
		11.40.1.2 Frame out necessary openings for mason.
		11.40.1.3 Learn to lay block, brick, stone and cut same as is necessary.
		11.40.1.4 Learn to mix morter and pack to hod board for use by mason, assist supplying brick, block or stone for the mason, using tools of the masonry trade.
11.41.1	Electrical rough-in	11.41.1.1 Assist electrician in figuring circuit loads. Using electric drill to bore circuit runs.
		11.41.1.2 Locating panel box and nailing up boxes for switches, outlets, and fixtures.
		11.41.1.3 Assist electrician in make up boxes and tuck wires in boxes safely for cover.
		11.41.1.4 Nail metal plates over wires potentially in danger of nails.
11.41.2	Pre-wire, phone, TV	11.41.2.1 Assist telephone and TV workman in prewiring rooms for telephone and TV outlets.

11.42.1 Electrical inspection by state	11.42.1.1 Observe inspection procedures and note corrections to be made, ask questions of inspector.
11.43.1 Insulation walls	11.43.1.1 Upon electrical inspection approval for cover, install insulation in exterior walls for cold and sound and other walls as specified, using tools of the trade.
11.44.1 Measure and order sheetrock or plaster supplies	11.44.1.1 Measure square area of ceiling and walls to be covered by sheetrock or plaster board, and order along with nails, corner beads, etc.
11.45.1 Sheetrock and/or plaster	11.45.1.1 Install sheetrock or plasterboard on ceilings, then on walls, breaking joints on sides, nailing with galvanized nails as specified, using a sheetrock hatchet or lath hatchet.
	11.45.1.2 Apply outside corners for both sheetrock and plaster, as directed. Apply inside corner mesh for plaster only, and mesh over joints as directed.
11.46.1 Taping or plastering	11.46.1.1 Mix taping compound to correct consistency or use ready mixed, and apply coat to joint with broad knife, spatula or trowel, and embed tape in compound using edge of knife or tool, till joint is covered and smooth. Allow to dry and scrape or sand excess compound off and second and third coat same procedure.
	11.46.1.2 Spot nail heads with same compounds, using broad knife or spatula or trowel, wipe off excess, allow to dry and second and third coat same procedure.
	11.46.1.3 Spray, brush, roll or trowel on texture, if applicable.
11.47.1 Seal and paint	11.47.1.1 Apply sealer to ceiling and walls as per specifications, before painting on either sheetrock or plaster. (if applicable)

	11.47.1.2 Stain and prefinish cabinets and woodwork before installation, apply finish coat after cabinets and trim is installed.
11.48.1 Plaster	11.48.1.1 Learn to mix plaster and carry to hod board, using tools of the trade.
	11.48.1.2 Learn to apply plaster to plasterboard for scratch or first coat.
	11.28.1.3 Learn to use Darby rod to screen plaster application smooth to even thickness.
	11.48.1.4 Learn techniques and using tools of the trade.
	11.48.1.5 Apply second coat and darby smooth.
	11.48.1.6 Apply texture over finish coat of plaster with color in texture, as desired.
	11.48.1.7 Apply sealer to plaster not colored before painting. (if applicable)
11.49.1 Underlayment and vapor barrier	11.49.1.1 Install vapor barrier over subfloor before applying underlayment.
	11.49.1.2 Install underlayment over vapor barrier for base for finish floor. Lay several sheets, stagger joints and align, nail corners with ringshank nails, cut to size and finish applying underlayment.
	11.49.1.3 Nail off underlayment using ring shank nails flushing head of nail with top of underlayment, four inch spacing all edges, and every eight inches in center of sheet.
11.50.1 Interior doors (pre-hung)	11.50.1.1 Using techniques of the trade, set doors into opening and shim jamb plumb on hinge side, nail through jamb into trimmer. Shim rest of jamb to have equal margin of approximately one eighth of an inch around door.

11.50.1.2 Trim off excess shim, ready for trim. (casing)

11.51.1 Interior trim

11.51.1.1 Apply casing to windows and doors, mitreing corners, gluing and nailing in place. Three sixteenth of an inch reveal from the edge of the jamb is normal procedure. Some prefer to prefinish trim before installation if it is to be stained, this alleviates glue sealing out stain near joints.

11.51.1.2 Base can be applied ahead of carpet if spaced three eights of an inch off the floor for carpet to be tucked under.

11.51.1.3 Other base installed after floor covering is installed.

11.52.1 Cabinets and built-ins

11.52.1.1 Installation of cabinets as per specifications (may be prefinished or may be built in on job) must be installed plumb and level.

11.53.1 Counter tops

11.53.1.1 Installation of countertops for laminate or other covering may be installed and then sink or range openings cut out, or cut out before installing. Selfedging may be applied the same. Countertops must be nailed securely and all joints filled.

11.54.1 Laminates

11.54.1.1 Using tools of the trade, precut laminates 1/8" to 1/4" wider and longer than needed for trim fit, usually a filed fit or routed edge for a tight joint.

11.54.1.2 Pre-fit joints before attempting to apply to counter top. File, sand, or route straight edges for good joint.

11.54.1.3 Apply contact cement to countertop edge and self edge strip first, allow to dry and contact laminate on edge of countertop. File flush with top, must be flat on top for good seal to top laminate. All joints must be filed fit and tight.

11.54.1.4 Apply contact cement to top of counter top and laminate and slow to dry.

11.54.1.5 Place wax paper, thin strips of wood or old venetian blind slate every 4 - 6" apart on top of counter top, so laminate can be fit into place and not contact at wrong place. When in position, remove slats and roll top surface, removing air bubbles and ensuring contact.

11.54.1.6 Using router and laminate trimming attachment, trim edge, bevel and file smooth.

11.55.2 Cove and cap metal

11.55.2.1 Apply bead of caulk to back edge of formica and wall, embed cove metal into caulk for a seal to counter top. Pre-cut metal, mitre corners, cutting 3/16" short of end of counter, for cap metal to fit over end. Nail to wall with #2 or #3 headed nails. (Can be contacted to wall with back splash and cap metal)

11.55.2.2 Trim backsplash to fit 1/8" past end of cove metal, mark along top and end of backsplash and will serve to guide application of contact cement. Fit cap metal onto back splash and contact both wall area and back of backsplash and metal, allow to dry and carefully put into place and roll or press to wall for contact.

11.55.2.3 Using same technique finish balance of backsplash, and clean excess contact cement and caulking with lacquer thinner on a rag. Sand or file all sharp edges.

11.54.1 Linoleum and tile

11.56.1.1 Fill joints in underlayment with Fixall (trade name) joint filler, scrape smooth, clean floor, for linoleum and carpet application.

11.56.1.2 Assist linoleum layer making pattern template, cut linoleum and spread linoleum paste with knotched trowel on underlayment, and place linoleum, roll flat, using tools of the trade.

11.57.1	Carpet	11.57.1.1 Assist carpet layer: Nail tack strips around perimeter of room, cut carpet, stretch, trim and tuck under base.
		11.57.1.2 Assist carpet layer in seaming operation, sewing or vulcanizing.
11.58.1	Paneling	11.58.1.1 Paneling wall by mailing or adhesive and nails, scribing to wall corner and ceiling, cover bottom with base.
11.59.1	Touch-up	11.59.1.1 Touch-up paint, walls, woodwork.
11.59.2	Landscape	11.59.2.1 Agriculture class build fence and landscape yard.
11.60.1	Mop-up	11.60.1.1 Install shelves - cabinets, adjust latches, catches, pulls. Install door locks and latches on swinging doors, bath, bedrooms, etc. Door stops, etc. Complete check to finished job inside.
11.60.2	Sewer connection	11.60.2.1 Dig sewer line to street and lay sewer tile and make hookup.
11.60.3	Storage cabinets in garage.	11.60.3.1 Build and paint storage cabinets in garage. Build in place for alternate experience.
11.60.4	Plumbing trim-out	11.60.4.1 Install plumbing fixtures and check for leaks, using tools of the trade.
11.60.5	Electrical trim-out	11.60.5.1 Install switches, plugs, plate covers, wire in appliances, etc. Check out complete circuitry.
11.61.1	Clean entire house	11.61.1.1 Wash windows, install screens, vacuum floors, dust and wipe woodwork.
11.62.1	Open House	11.62.1.1 Hold open house, guest register, student guides answer questions and serve refreshments.
		Bid applications available.

OCCUPATIONS - SUGGESTED ACTIVITIES

I. Personality
Activity:
Discuss the importance of getting along well with people on the job.

II. Career interests
Activity:
Select one occupation and tell why it holds a high interest for you.

III. Hobbies
Activity:
Canvass your class to find out the most popular hobbies of the group.

IV. Homemaking
Activity:
How might a homemaker earn extra money without having to leave the home?

V. Choosing an occupation
Activity:
Outline a tentative plan, including preparations, for the occupation that at present you believe you would like to have.

VI. Preparing for an occupation
Activity:
List as many schools as you can find out about in which graduates of your school have continued training after leaving high school.

VII. Apprenticeship
Activity:
What industries depend upon apprenticeship for skilled workers?

VIII. Getting your first job
Activity:
In seeking a job in your community, what agencies and individuals would you consult and why?

IX. How to study occupations
Activity:
Make your own original outline on how to study an occupation.

A. Professional occupations
Discuss licensing and certification requirements of professional workers. (Obtain regulations from your State Department of Education)

B. Semiprofessional occupations
Make an individual report on one semiprofession established in your community.

C. Administrative occupations
Invite the manager of a local firm to talk to your class about operating a business.

D. Office occupations
What particular qualifications and preparation do office workers need?

E. Selling occupations
Tell about any part time, on the job training that is, work experience programs for selling occupation in your community.

F. Domestic service occupations
What are the trends in domestic employment in your community since World War II?

G. Personal and building service occupations
In what different types of places in your community are personal service workers employed?

H. Protective service occupations
Discuss bulletins, obtained from local recruiting stations, on how to enter the armed services.

I. Agricultural, Fishery, and Forestry occupations
What occupational opportunities are available on farms in your state? (Ask a representative of your class to write to the state agricultural college for printed materials)

J. Food preparation occupations
In your community what foods are raised for market, canned for sale, or quick-frozen commercially? Which offers year-around employment opportunities?

K. Graphic occupations
What local apprenticeship opportunities are open in printing?

L. Skilled workers
What apprenticeship opportunities in your community are open for new applicants who desire to become skilled workers?

M. Semi-skilled occupations
List the semi-skilled jobs that you know about in your community. (Consult the Dictionary of Occupational Titles, Volume II, for a complete list)

N. Unskilled occupations
What are the trends in wages in your community for unskilled workers? (Ask your nearest State Employment Office)